

REMARKS

Entry of the foregoing and reconsideration of the subject application are respectfully requested in light of the amendments above and the comments which follow.

Claims 1-18 were pending in this application. In this response, claims 1, 2, and 7 are amended; claims 19-21 are added; and no claim is canceled. Thus, claims 1-21 are pending.

Support for the foregoing amendments can be found, for example, in at least the following locations in the original disclosure: the original claims, Figures 1- 4 and the specification, page 5, lines 25-30 and page 7, lines 4-27.

REJECTIONS UNDER 35 U.S.C. § 103

Claims 1-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,948,889 to Arvidsson (hereafter “*Arvidsson*”) in view U.S. Patent No. 3,175,850 to Steczynski (hereafter “*Steczynski*”) of on the grounds set forth at page 2 of the Official Action. Applicants respectfully traverse.

1. *Arvidsson* does not qualify as prior art under 103(c).

Arvidsson only qualifies as prior art under 102(e). The effective filing date of the present invention is January 28, 2005 because this application is a national stage entry of PCT/SE05/00104, which was filed on January 28, 2005. Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the claimed invention was made, owned by

the same person or subject to an obligation of assignment to the same person. 35 U.S.C. §

103(c). Applicants invoke the above provision and confirm that:

The subject matter of *Arvidsson* and the claimed invention, were at the time the claimed invention was made owned by or subject to an obligation of assignment to Sandvik AB.¹

Thus, *Arvidsson*, as cited, does not qualify as prior art for purposes of rejection under 35 U.S.C. § 103.

It is implied that the Examiner has substituted US 2003/0210961 A1, which is the Pre-grant Publication of US Patent Application No. 10/392,898 published November 13, 2003 for U.S. Patent No. 6,948,889 cited by the Examiner that resulted from U.S. Patent Application No. 10/392,898, because the Pre-grant Publication does qualify as prior art, while the cited U.S. Patent does not, for the reasons explained above. Applicant respectfully requests the rejection reflect the correct citation, and more importantly, properly list US 2003/0210961 A1 in a PTO 892 form.

2. *Arvidsson* and *Steczynski* combined fail to disclose all the claimed limitations.

Even if *Arvidsson* did qualify as prior art for purposes of rejection under 35 U.S.C. § 103, the rejection is improper because the rejection has failed to establish a *prima facie* case of obviousness. At least one element of the claims are not taught in the cited references. Applicants agree with the Examiner that *Arvidsson* fails to disclose “widths of two or more grooves positioned one after the other in a series in one of the connecting surfaces increasing progressively from a first groove to a last groove in the series.” *See, e.g.*, pp. 2-3 of the Office Action. Although *Steczynski* discloses grooves having increased widths, the increased width is a result of decreasing the depth of the grooves. *See, e.g.*, Fig. 4a. *Steczynski* does not teach a surface containing grooves with progressively increasing width where the depth of each groove

is the same. Therefore, any modification of *Arvidsson* based on the teachings of *Steczynski* would result in a surface wherein the depth of each groove would not be the same. Thus, no combination of *Arvidsson* and *Steczynski* can teach all of the claim limitations. Applicants respectfully request withdrawal of the rejection for at least this reason.

3. *Arvidsson* and *Steczynski* can not be combined to teach Applicants' claims.

Arvidsson and *Steczynski* cannot be combined, because there is no reason to combine the references except by use of impermissible hindsight reasoning. Using the claimed invention as a roadmap to find its prior art components is impermissible hindsight reasoning. *Princeton Biochemicals Inc. v. Beckman Coulter Inc.*, 75 U.S.P.Q.2d 1051, 1054 (Fed. Cir. 2005). The Examiner fails to provide any rationale for why one of ordinary skill in the art without using the claims as a roadmap, would form a serration type connecting surface of a cutting tool, "wherein the widths of two or more grooves positioned one after the other in a series in one of the connecting surfaces increase progressively from a first groove to a last groove in the series." The Examiner merely provided a conclusory statement that the particular arrangement would be obvious to one of ordinary skill in the art because of "the commonly understood benefits of such adaptation, that is, a firmer connection; economy of design and cost of production." See, e.g., p.3 of the Office Action.

One of ordinary skill in the art, without the knowledge of the claimed invention, would not have formed the connecting surface with the particularly claimed elements for at least the following reasons:

¹ Both USP 6,948,889 and the present application have been assigned to Sandvik Intellectual Property AB.

- A) there is no reason other than hindsight supported by evidence on the record to modify *Arvidsson* as proposed; and
- B) *Steczynski* is non-analogous art.

A. No non-hindsight reason for modifying *Arvidsson* as proposed

There is no evidence in the record that forming a connecting surface with increasing width of grooves forms a firmer connection. *Arvidsson* provides no teaching of progressively increasing the width of the grooves from a first groove to a last groove. The increase in width of the last three grooves in Figure 4a of *Steczynski* is not performed to form a firmer connection. The width increase is merely a result of decreasing the depth of the grooves so as to form a vanishing thread. *See, e.g.*, col. 6, ll. 39-41. Instead of providing evidence of a firmer connection, *Steczynski* discloses the opposite. With a shallower groove between the threads of *Steczynski*, the last three threads have a weaker connection, not stronger as alleged by the Examiner. The same would be true if the teachings of *Steczynski* were applied to the insert seat of *Arvidsson*. If the width of the grooves of *Arvidsson* were increased by decreasing the depth as taught in *Steczynski*, the connection between the connecting surfaces of the cutting tool would also become weaker. Therefore, without evidence to the contrary, one of ordinary skill in the art would not expect or predict that increasing the width of the grooves, especially by decreasing the depth of the grooves would increase the connection strength. Note also that Applicants do not increase the width of grooves progressively from a first groove to a last groove to provide a stronger connection, the width is progressively increased to allow for improved alignment of the cutting edges. *See, e.g.*, Specification p.9, ll. 19-37.

The Examiner also alleges that progressively increasing the groove width provides improved economy of design and cost of production. This is also not supported by any evidence

in the record, and is contrary to common understanding of ones having ordinary skill in the art. Forming grooves with progressively increasing widths would certainly not make production cheaper, if anything production costs would increase, because of the need to produce a plurality of different width grooves. It appears the Examiner is attempting to rely on the statement in *Steczynski* in column 6, lines 49-53 that says that producing less threads decreases cost of production, for the opinion that the increased groove width makes production cheaper. However, the fact that the design of Figure 4 in *Steczynski* eliminates two threads when forming a vanishing thread, and thus improves production costs, has nothing to do with whether grooves on connecting surfaces of a cutting tool can be produced cheaper, if the groove widths are increased progressively. Therefore, without evidence to the contrary, one of ordinary skill in the art would not expect or predict that increasing the width of the grooves, especially by decreasing the depth of the grooves would improve the production costs. Note also that Applicants are concerned with whether the claimed arrangement will increase production costs, with no mention of production cost improvements from the arrangement. *See, e.g.*, Specification p.9, ll. 33-39.

Therefore, the Examiner has provided no evidence, including any actual common knowledge of one of ordinary skill in the art, for why it would be obvious to progressively increase the width of the grooves in at least one connecting surface of a cutting tool. Thus, the Examiner is merely finding the pieces of the claim, and putting them together solely from Applicants' own teachings, which is impermissible hindsight. Applicants respectfully request withdrawal of the rejection for at least the above reason.

B. *Steczynski* is non-analogous art

The fact that *Steczynski* is non-analogous art is another sign that the Examiner has impermissibly used Applicants' specification as a roadmap to reconstruct the claims. Only in an attempt to find the missing elements of the claim irrespective of the invention as a whole, would someone look to an invention regarding threads for teachings regarding the design of the claimed connecting surfaces. Because *Steczynski* is a different field of endeavor from the claimed invention and *Arvidsson*, *Steczynski* must deal with a matter that logically would have commended itself to an inventor's attention. See MPEP § 2141.01(a)(I). However, as explained above, *Steczynski* is concerned with forming a vanishing thread, which would not come to an inventor's attention when designing the connecting surface or insert seat for a cutting tool.

Although can be analogous if there are structural or functional similarities, *Steczynski* is not structurally or functionally similar. See MPEP § 2141.01(a). Structurally, the claimed invention and *Arvidsson* form a planar ridge and groove patterned surface for allowing a corresponding surface to be aligned within the grooves, whereas *Steczynski* describes a spiral thread within a hole. The references also differ functionally. The ridges and grooves of the claimed invention and *Arvidsson* provide a tongue and groove type connection that requires a further screw and thread combination to hold the tool in place. The ridges and grooves of the claimed invention and *Arvidsson* are used for alignment purposes and not for connection, whereas the thread of *Steczynski* is used to form the connection with the corresponding surface. Therefore, *Steczynski* is non-analogous art and is only selected by the Examiner as a secondary reference based on hindsight reconstruction of the claims without considering the claimed invention as a whole. Applicants respectfully request withdrawal of the rejection for at least the above reason.

Dependent claims 3-6 and 8-18, which depend from claims 1, 2, and 7 respectively, are also not obvious for at least the same reasons as for claims 1, 2, and 7. For at least these reasons, no *prima facie* case of obviousness has been established, and the rejection should be withdrawn.

Claims 3-5, 8-11, and 13-17 are not obvious for at least the additional reason that the claims further define the width enlargement. *Arvidsson* and *Steczynski* fails to suggest width enlargement for the reasons presented above, much less specific dimensions of the enlargement. The Examiner alleges that the specific width enlargements claimed would have been an obvious matter of design choice because the width enlargement is merely a change in size. The Examiner must articulate reasons with rational underpinning to support legal conclusions of obviousness, not mere conclusory statements. *In re Kahn*, 441 F.3d 977, 988, 78 U.S.P.Q.2d 1329, 1336 (Fed. Cir. 2006); MPEP § 2142. Mere statement that the claimed invention is within the capabilities of one of ordinary skill in the art is not sufficient by itself to establish *prima facie* obviousness. See MPEP § 2143.10 (IV). The Examiner provides no factual support for the conclusion that it would be obvious to form the tool part having the claimed features. In contrast, the factual evidence points to the claimed features being non-obvious. *Arvidsson* has no disclosure of such a feature and Applicants have discovered that the claimed progressive width enlargement, allows precise alignment of the cutting edge of the tool part, with less strict tolerances, which allow the part to be made without cost-demanding, extraordinary machining operations. See, e.g., p. 9, ll. 19-39. Therefore, the Examiner fails to establish a *prima facie* case of obviousness for claims 3-5, 8-11, and 13-17 for at least this additional reason.

Claims 6, 12, and 18 are not obvious for at least the additional reason that the claims recite “wherein said first groove in the series of grooves is located closest to a free edge along the insert seat.” *Arvidsson* fails to suggest that limitation. The Examiner states that rearranging

parts of an invention involves only routine skill in the art. This is equivalent to a statement that the claimed invention is within the capabilities of one of ordinary skill in the art, and is also not sufficient by itself to support a conclusion of obviousness. The Examiner provides no factual support for the conclusion that it would be obvious to form the tool part having the claimed features. In contrast, the factual evidence points to the claimed features being non-obvious. *Arvidsson* has no disclosure of such a feature, and Applicants have discovered that the claimed progressive width enlargement where the smallest groove is located closest to a free edge is an improvement. By progressively increasing the width of the groove from a free edge on a insert seat, the ridge closest to the cutting edge of the cutting insert will be aligned most precisely with a lower tolerance required during manufacturing of the tool part. *See, e.g.*, p. 9, ll. 19-39. Placing the smallest width at the ridge closest to the cutting edge is not a mere rearrangement of parts. Thus the rejection is improper for at least this additional reason and should be withdrawn.

Claims 19-21 are new independent claims that incorporate many similar limitations as claims 1, 2, and 7, and are not obvious for at least the additional reason that the claims recite “wherein the ridges and grooves are straight and parallel.” *Arvidsson* fails to suggest at least that limitation. *Arvidsson* discloses ridges and grooves that are curved and not straight. *See, e.g.*, Figs. 8-11. *Arvidsson* desires the ridges and grooves to not be straight and parallel to enable the connecting surface to ensure an exact location of the cutting insert in all three directions in a conceived system of coordinates without measures other than the cutting insert being pressed in one of said coordinate directions. *See, e.g.*, col. 2, ll. 25-30. Modifying *Arvidsson* to possess straight and parallel ridges and grooves would render *Arvidsson* unsatisfactory for its intended purpose, because the insert would be capable of moving in a direction parallel to the ridges and

grooves. Thus, *Arvidsson* teaches away from such a proposed modification, and cannot be used to establish a *prima facie* case of obviousness of claims 19-21.

CONCLUSION

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

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